PROJECT REPORT ON NUTRITION ASSISTANT APPLICATION

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PROJECT	NUTRITION ASSISTANT APPLICATION

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Project Report

INTRODUCTION

1.1 Project Overview

This project attempts to create a web application that automatically calculates food qualities like ingredients and nutritional value by identifying the supplied food image. Our approach uses Food APIs to provide the nutritional information of the recognitions food and Clarifai's AI-Driven Food Detection Model for precise food recognition.

1.2 Purpose

A healthy diet is essential for good health and nutrition.To provide healthy life we have proposed this system.You can automatically calculate the nutritional information for every dish, assess recipe costs, visualize component lists, locate recipes based on what's in your fridge, find recipes based on specific diets, nutritional requirements, or preferred foods, categorize recipes into categories and cuisines.

LITERATURE SURVEY

2.1 Existing problem

Mobile applications that count calories, such as My Fitness Pal, are frequently employed on a daily basis. Recent research has shown that in

undergraduates, calorie tracking is associated with eating disorder pathology.We also assessed perceptions that My Fitness Pal contributed to eating disorder symptoms and if these perceptions were associated with eating disorder symptoms. We found that a substantial percentage (~ 75%) of participants used My Fitness Pal and that 73% of these users perceived the app as contributing to their eating disorder.

2.2 Reference

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[3] A. B. Ocay, J. M. Fernandez and T. D. Palaoag, "NutriTrack: Android-based food recognition app for nutrition awareness," 2017 3rd IEEE International Conference on Computer and Communications (ICCC), 2017, pp. 2099-2104, doi: 10.1109/CompComm.2017.8322907.

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2.3 Problem Statement Definition

IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation & Brainstorming

3.3 Proposed Solution

S.NO	Parameter	Description
1	Problem Statement (Problem to be solved)	It is easy to fall into the trap of eating unhealthy foods which are high in calories. Once the nutritional value is replaced by foods high in sugar, saturated fats, and salt it leads to various health issues. Therefore, users need to control their daily calorie intake to lead a healthy lifestyle
2	Idea / Solution description	• The solution is a responsive Web

		application • Our method uses Clarifai's AI-driven food recognition model to accurately identify food suggestions. • The website provides a user-friendly interface and accepts multiple samples predicting them simultaneously. • A detailed report of the concerned person's health will be generated.
3	Novelty / Uniqueness	• It provides food journal • Diet charts for users is based on their BMI and medical condition if any. • Recipes are according to individual diet.
4	Social Impact / Customer Satisfaction	• Receiving user comments for improvement and sending notifications about their diet programmed and goal-tracking. • Targeted in-depth reports assessments and food banks with a nutrition focus are the best.
5	Business Model (Revenue Model)	Users can get additional benefits including diet programmed, expert assistance, and in-app adverts by purchasing a subscription option. With big data processing and targeted

		in-depth reporting evaluations that paid subscriptions the best, revenue is made on a subscription basis.
6	Scalability of the Solution	• Providing frequent updates • Effective goal tracking support • Additional functions like sleep tracking and measurement tracking are possible.

3.4 Problem Solution fit

REQUIREMENT ANALYSIS

4.1 Functional requirement

- User Registration
- User Confirmation
- User profile Completion
- Gather meal image
- Display Calorie image

4.2 Non-Functional requirements

- Usability
- Scalability
- Security
- Reliability
- Performance
- Availability

PROJECT DESIGN

5.1 Data Flow Diagrams

5.2 Solution & Technical Architecture

5.3 User Stories

I can sign up for the application as a user by providing my email, password, and password confirmation.
As a user, I can access the application by providing my email address and password after registering for it and receiving a confirmation email.
As a user, I may fill out the information, search the food items, scan the food, and obtain the nutritional information and recipes for associated scanned foods.

PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

sprint	Functional requirement(Epic)	User story number	User story/Task	Story points	Priority	Team members
sprint 1	Registration	USN-1	As a user ,I can register for the application by entering my email,password,and confirmation my password.	2	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI SS KAVYABALA SB
sprint 1		USN-2	As a user ,I will receive confirmation email once I have registered for the application	1	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI SS KAVYABALA SB
sprint 1	Login	USN-3	As a user,I can log into the application by entering email & password	1	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI

						SS KAVYABALA SB
sprint 2	User Details	USN-4	As a user,I can fill the details	2	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI SS KAVYABALA SB
sprint 3	Push notification and chatbot	USN-5	As a use,I will search the food items	2	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI SS KAVYABALA SB
sprint 4	shown the nutrition details and recipe for scanned food	USN-6	As a user,I can scan the food an get the nutrition details and recipe for related scanned food	1	High	ADHWAITH CHANDRAN KEERTHANA MS NANDHINI SS KAVYABALA SB

6.2 Sprint Delivery Schedule

CODING & SOLUTIONING

7.1 Feature 1

The user can chat with bot anytime for their queries and diet plan

7.2 Feature 2

```
from flask import Flask, make_response, redirect, render_template, request, session
from datetime import datetime
from keys import SERVER_SECRET, AUTH_SERVER_REDIRECT_URL
from utils.jwt_token import validate_token
from models.food import Food
import main_controller


from models.food import Food

app = Flask(__name__)
app.secret_key = SERVER_SECRET

Food.create_foods_table()


@app.route("/")
def set_token():
    token = request.args.get('access-token') or request.cookies.get('access-token') or ''

    if token != '':
```

7.3 Database schema

IBM Db2

A hybrid ANSI-compliant data virtualization tool for accessing, querying and summarizing data across the enterprise which:

• Provides a massively parallel processing (MPP) architecture Exploits Hive, HBase and Apache Spark concurrently for best-in-class analytic capabilities

• Requires only a single database connection or query to connect disparate sources such as HDFS, RDMS, NoSQL databases, object stores andWeb HDFS

• Provides low latency support for ad-hoc and complex queries,high performance, and federation capabilities

• Understands dialects from other vendors and various products from Oracle, IBM® Db2® and IBM Netezza®

• Enables advanced row and column security

KUBERNATES-

• Kubernetes — also known as “k8s” or “kube” — is a container orchestration platform for scheduling and automating the deployment, management, and scaling of containerized applications.

• Kubernetes was first developed by engineers at Google before being open sourced in 2014. It is a descendant of Borg, a container orchestrationplatform used internally at Google. Kubernetes is Greek

• for helmsman or pilot, hence the helm in the Kubernetes logo (link resides outside IBM).

• Today, Kubernetes and the broader container ecosystem are maturing into a general-purpose computing platform and ecosystem that rivals — if not surpasses — virtual machines (VMs) as the basic building blocks of modern cloud infrastructure and applications.

• This ecosystem enables organizations to deliver a high- productivity Platform-as-a-Service (PaaS) that addresses multipleinfrastructurerelated and operations-related tasks and issues

TESTING

8.1 Test Cases

i. To determine whether our code produces the desired output it was tried on a variety of foods.

ii. We have tested it to meet the requirements of the customer.

8.2 User Acceptance Testing

RESULTS

9.1 Performance Metrics

A series of photos were examined with the suggested approach. There are many different food-related photos in the training database. A food's equivalent nutrition is displayed on the screen after it is identified.

ADVANTAGES & DISADVANTAGES

10.1 Advantages

- Nutrient information about any food is available at any time, from any location.
- Various diet plans is provided by chatbot
- This helps to avoid fast food and helps in leading a healthy life
- Today leading a healthy life is difficult this application makes that process easy.

CONCLUSION

Finally, many people have become more aware of their health.They are also taught how to live a healthy lifestyle. The majority of research on these topics aims to identify changes in healthy lifestyle behavior using web applications that are effective in dietary self-monitoring.

FUTURE SCOPE

In health care settings, nutrition aides assist dietitians in providing a balanced diet.They identify the dietary requirements of the patients, evaluate risk factors, and create menus and meals.They also make sure that plates and other items are properly sterilized.

APPENDIX

13.1 Source Code

13.2 GitHub

https://github.com/IBM-EPBL/IBM-Project-46832-1660792734